CIST GRAVES IN OHIO.—No. 56 of the Western reserve and Northern Ohio Historical Society's tracts describes ancient burial cists in Northeastern Ohio, similar to those described by Dr. Joseph Jones in Tennessee. The graves opened by Mr. Cornelius Baldwin, are situated near Parkman, Geauga county, Ohio.

SPECIAL COLLECTIONS IN THE NEW NATIONAL MUSEUM.—As we have previously stated, the new National Museum will be entirely anthropocentric in its arrangement. At an early day we shall lay the whole scheme before our readers. Number 7 of the circulars is by Dr. James M. Flint, U. S. N., and gives an idea of what the entire exhibit will be when completed. Dr. Flint's circular is a classification of the forms in which drugs appear and are administered. The collection of medicines when completed will constitute an object lesson on the anthropology of medicine, including those of all ages and races of men.

GEOLOGY AND PALÆONTOLOGY.

NEW MARSUPIALS FROM THE PUERCO EOCENE.—In preceding numbers of the NATURALIST, the characters of two new species of as many genera of kangaroo-like Marsupialia from the Puerco Eocene were given. I now add to these three additional species, one of which represents a new genus. The bones obtained with the teeth confirm the reference to the marsupial order which has already been made. In one of the species, *Catopsalis pollux* m., the astragalus is preserved. It considerably resembles that of a kangaroo; the reduced navicular facet and the large cuboid facet indicate the predominant development of the external digits, and the reduction of those of the inner side of the foot. Caudal vertebræ indicate a large tail.

Polymastodon taöensis, gen. et sp. nov. *Char. gen.*— Known only from the inferior dentition. Supposed formula: I. 1; C. 0; P.-m. 0; M. 2. The first true molar is large, exceeding the second, and supports three longitudinal series of tubercles. Function of the molars grinding.

In this genus the molar part of the dentition assumes the exclusive control of mastication, having already displayed a predominance in *Catopsalis*. The molars are similar in their general character to those of *Ptilodus* and *Catopsalis*, but the three rows of tubercles distinguish them from both.

Char. specif.—The first true molar is two-fifths of itself longer than the second molar, and viewed from above, it has an oval outline, a little narrowed anteriorly and with rounded extremities. Its tubercles are small and closely packed together, so that those of the middle row have a subquadrate outline. There are eight tubercles in the internal row, twelve in the external and nine in the median. There are no basal cingula. The second and last true molar has a pyriform outline when viewed from above, the posterior extremity being the narrow one. The contraction of

the outline is regular on each side, and the posterior extremity is rounded. There are seven tubercles in the external row, five in the middle row and only two in the internal, since the middle row forms the internal edge of more than half the length of the crown. No cingula.

Measurements.—Length of M. I, m. .0225; width of M. I at middle, .0100. Length of M. II, .0140; width of M. II anteriorly, .0115. Besides the three rowed tubercles of the first molar, and the apparent absence of the fourth premolars, this species differs from the *Catopsalis pollux* in the large size and the larger number of tubercles in each row of the molars. New Mexico, D. Baldwin.

Catopsalis pollux, sp. nov.—The size of this species exceeded that of *Macropus giganteus* and still more that of the *Catopsalis foliatus*. The ramus has the form of that of a rodent, being vertically narrowed at the diastema, and deep at the molar region. The inferior face widens and becomes flat posteriorly, and is more oblique than in the *C. foliatus*, from the greater downward extension of the external or masseteric edge. The interior edge on the contrary, ascends a little from the anterior inferior border, enclosing the large internal pterygoid fossa. The inferior plane commences below the anterior part of the first true molar. The symphysis is short, and was not probably strongly united, as indicated by the few rugosities of its surface. The coronoid process rises from a point opposite the posterior extremity of the first true molar.

The incisor is relatively large, and is more curved than that of a kangaroo, having the general form of that of a rodent. The acumination or bevel of the posterior face is less rapid than that of a rodent, and is perfectly gradual. The enamel band covers the antero-external face as far as exposed, which is to below the anterior part of the diastema, and is gently convex in transverse section. It does not cover the entire external face, as its width is equal, while the antero-posterior diameter of the tooth increases below. The posterior face is convex and is not much narrowed. The internal face is slightly concave, and the enamel is recurved so as to form a band on its anterior part, thus differing from most rodents. The enamel surface is delicately obsoletely line-ridged. The length of the diastema is equal to that of the combined P.-m. IV and M. I. The fourth premolar is a simple tooth with a triangular transverse section, the obtuse apex of the triangle looking forward. This edge is continued downwards by reason of the exposure of the anterior root, and is not acute. The first true molar is an elongate-oval, with six tubercles on each side. These are so closely placed that their outlines are angular, and they are only separated by fissures. No cingula. The second true molar is three-fifths the length of the first, and is broadly rounded posteriorly. It supports four tubercles on the internal, and five on the external sides, and a raised edge connecting the

sides posteriorly. The tubercles are appressed as in the first molar. No cingula.

Measurements.—Length of ramus without incisor to posterior edge above angle; M. .094. Length from do. to last molar inclusive, .060. Length from do. to fourth premolar, .025. Diameters M. I, anteroposterior, .019, transverse, .009; diameters M. II, anteroposterior, .012, transverse, .010; depth of ramus at middle of diastema, .024; depth of ramus at middle of M. I, .033.—D. Baldwin.

Ptilodus trovessartianus, sp. nov.—This species is represented by three of the characteristic fourth inferior premolars, one of which stands on a part of the ramus, giving its depth. These differ from those of the *P. mediaevus* in their uniformly smaller size, and in their strongly serrate posterior edge. The number of lateral edges is 12, as in *P. mediaevus*. Length of fourth premolar, M. .0055; elevation of do. .0040; depth of ramus at P.-m. IV, .0057. Discovered by D. Baldwin. Dedicated to the distinguished mammalogist, Dr. E. L. Trouessart, of Angers.

Haploconus entoconus, sp. nov.—The largest species of the genus, represented by a right maxillary bone supporting the last five molars. The peculiarity which distinguishes it from the *H. lineatus* is the conical form of the internal lobe of the fourth premolar, which is in the *H. lineatus*, flat and concentric in section. Further, the posterior inner or cingular cusp of the true molars is extended further inwards than in that species, giving the crowns a greater transverse extension. The posterior molar has the posterior external angle less developed than the other molars. The third premolar is a robust cone with subtriangular base.

Measurements.—With base of P.-m. III, m. .007; of P.-m. IV, .008; length of base of do. .0055; width base M. I, .0085; length do. .0050. Puerco beds of New Mexico. D. Baldwin.

Haploconus gillianus, sp. nov.—A small species of the size of the *H. angustus*, but having the same peculiarity of the fourth superior premolar as the *H. entoconus*, *i. e.*, with the internal lobe conic. That tooth is also relatively smaller than in the *H. entoconus*, and has an anterior basal external tubercle not found in that species. The inferior true molars have an anterior median tubercle which is not found in the *H. angustus* and *H. xiphodon*, and the external anterior cusp has not the compressed form general in the genus.

Measurements.—Diameters superior P.-m. IV, anteroposterior .0033; transverse, .0046. Diameters superior M. I; anteroposterior .0040; transverse, .0060. Length last two inferior molars, .0093; length of last inferior molar, .0050. Depth ramus at M. II, .0085. From W. W., New Mexico. D. Baldwin. Dedicated to my friend Prof. Gill, of Washington.—*E. D. Cope.*

GEOLOGICAL NEWS.—In Vol. XV, Part I, of the Geological Survey of India, R. Lydekker, F.Z.S., describes the triassic

limestones of Northwest Kashmir, and the palæozoic and metamorphic rocks of the same district, as well as the tertiaries of the lower Kishanganga valley and Kházán. He also describes and figures the entire lower jaw of *Pachygonia incurvata* Huxley, a labyrinthodont from the Panchet rocks, and portions of the mandibles of *Gonioglyptus huxleyi* Lydekker, and *Glyptognathus fragilis* Lyddeker, both labyrinthodonts from the same group.——Professor Whitney has recently published a work on the climatic changes of later geological times, in which he maintains that our globe is gradually becoming desiccated —a process that commenced in cretaceous times. The increasing dryness, within historical times, of Persia, Arabia, the countries around the Aral and Caspian, North Africa and Greece, is proved by abundant facts. Setting aside the removal of forests, and the effects of the glacial period, Professor Whitney refers this decline in precipitation to a diminution of the earth's temperature consequent on lessened solar radiation.—— The May number of the *Geological Magazine* contains contributions to the palæontology of the Yorkshire oolites, by W. H. Hudleston, with descriptions of a new genus and two new species of gasteropods.——To the same number Professor Marsh contributes an article upon the wings of Pterodactyls. The "pteroid bone" is maintained to be a part of the first digit; it supported a membrane extending from near the shoulder to the wrist, and was articulated to the "lateral carpal," which is probably the metacarpal of the first digit. Thus the wing finger is the fifth, not the fourth, since the pteroid bone is upon the radial side.——Dr. W. Flight continues his history of meteorites, and the Rev. B. Irving his argument upon the classification of the European rocks known as Permian and Trias. ——In the same magazine Mr. H. H. Howorth considers the evidence of the loams and brick-earths in favor of a post-glacial flood. He believes that the Diluvium of Russia was continuous with the loam of France and Spain until the outpouring of the volcanic mud, which, swept over and mingled with it by the great flood, constitutes the loess. Patches of this loam, occupying valleys in France, Britain, etc., remain undisturbed, and form brick-earth, while the remainder has been altered and its pebbles rolled. The glacial period had passed, and ice would have scooped out the soft loam from the valleys, so that the result could only have been accomplished by a great flood.

MINERALOGY.[1]

A PHOSPHORESCENT VARIETY OF LIMESTONE.—Through the courtesy of Professor E. D. Cope, the writer has had an opportunity of examining a remarkable substance recently found in one of the mountain mines of Utah, near Salt Lake city. It is a white rock which phosphoresces with a lurid red light whenever struck

[1]Edited by Professor H. CARVILL LEWIS, Academy of Natural Sciences, Philadelphia, to whom communications, papers for review, etc., should be sent.